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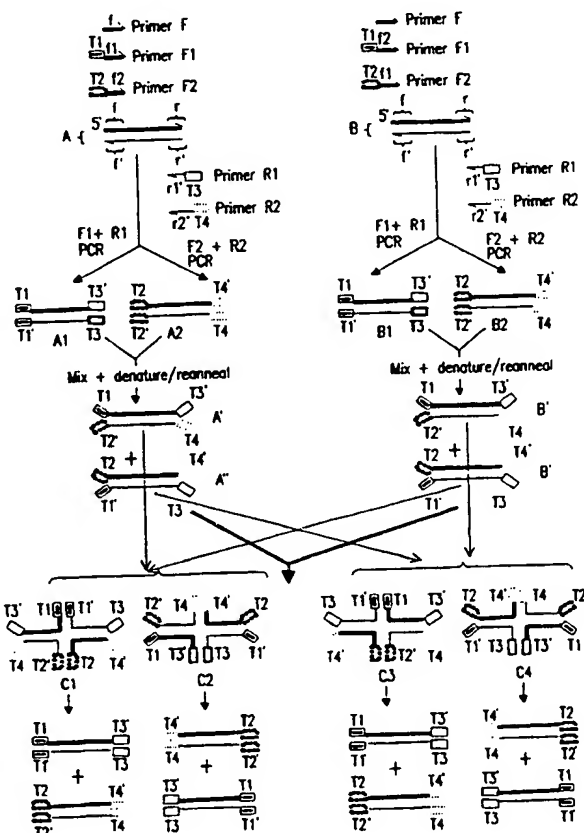
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[Continued on next page]

(54) Title: METHODS FOR DETECTION OF DIFFERENCES IN NUCLEIC ACIDS



(57) Abstract: The present invention provides methods for detecting the presence or absence of a difference between two related nucleic acid sequences. In the methods, a target nucleic acid and a reference nucleic acid are contacted under conditions in which they are capable of forming a four-way nucleic acid complex with a branch structure that is capable of migration. Under the contact conditions, if the reference nucleic acid and target nucleic acid are identical, branch migration is capable of going to completion resulting in complete strand exchange. If the reference nucleic acid and target nucleic acid are different, branch migration does not go to completion, resulting in a stable four-way complex. Detection of the stable four-way complex identifies the presence of a difference between the nucleic acids. A stable four-way complex can be detected with molecules that specifically bind such complexes, by gel electrophoresis or by specific isolation of the stable four-way complex.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER IPC(7) : C12Q 1/68 US CL : 435/6 According to International Patent Classification (IPC) or to both national classification and IPC														
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) U.S. : 435/6 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) USPAT, DERWENT WPI, MEDLINE, BIOSIS search terms: holliday junction, mutation, resolved, duplex, complex														
C. DOCUMENTS CONSIDERED TO BE RELEVANT														
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.												
A	US 6,013,439 A (LISHANSKI et al.) 11 January 2000.	1-18												
A	US 5,824,471 A (MASHAL et al.) 20 October 1998.	1-18												
A	US 5,698,400 A (COTTON et al.) 16 December 1997.	1-18												
A	WO 97/23646 A1 (BEHRINGWERKE AKTIENGESELLSCHAFT) 03 July 1997.	1-18												
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.														
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Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230		Authorized officer KENNETH R. HORLICK Telephone No. (703) 308-3905												